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James S. Tak
Assistant Laboratory Counsel
Lawrence Livermore National Laboratory
P.O. Box 808, L-703
Livermore, CA 94551

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| EXAMINER |
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TANINGCO, MARCUS H

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| ART UNIT | PAPER NUMBER |
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2884

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,169

Applicant(s)

CRAIG ET AL.

Examiner

Marcus H. Taningco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 80-83, 85-89, 91-111, 113-117 and 119-123 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 80-83, 85-89, 91, 94-100, 106-111, 113-117, 119, 122, 123 is/are rejected.
- 7) ☒ Claim(s) 92, 93, 101-105, 120 and 121 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Amendments filed 3/22/06 have been entered. Claims 84, 90, 112, and 118 have been cancelled in favor of claims 80-83, 85-89, 91-111, 113-117, and 119-123.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 83, 89, 111, and 117 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 83, 89, 111, and 117 recite the following limitations not described in the specification: low resistivity regions characterized by low performance and power drain.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 80-83, 87-89, 91, 94-100, 106-111, 115-117, 119, 122, and 123, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gagnon et al. (US 6,694,172) in view of Shahar et al. (US 6,034,373).

Re claims 80 and 94, Gagnon discloses a room temperature (Col. 2, 39-40) CdZnTe (Col. 2, 31) gamma detector **20** comprising a pixel array **18** wherein defective pixels are disabled electronically (Fig. 3; Col. 6, 39-41). Gagnon fails to specifically teach said detector pixilated into a plurality of small pixel effect type pixels. Nevertheless, Shahar teaches a semiconductor radiation detector comprising small pixel effect type pixels (Col. 16, 58-59). It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Gagnon with small pixel effect type pixels in order to increase resolution.

Re claim 81, Gagnon discloses a readout **42** having a plurality of channels connected to the pixels (Col. 5, 65-67; Col. 6, 1).

Re claim 82, Gagnon discloses disconnecting or disconnecting individual defective pixels (Col. 6, 39-41).

Re claim 83, Gagnon discloses the claimed invention. But fails to specify the specific requirements of the defective pixels. However, those skilled in the art can appreciate that low resistivity, low performance, and power drain are common and well-known characteristics of defective pixels. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Gagnon with the recited pixel characteristics in order to improve resolution.

Re claim 87, Gagnon discloses means for disregarding data obtained from defective pixels (Col. 7, 39-41).

Re claim 88, Gagnon discloses an analyzing circuit **50** for setting a threshold level to detect defective pixels (Col. 6, 53-56).

Re claim 89, Gagnon discloses the claimed invention. But fails to specify the specific requirements of the defective pixels. However, those skilled in the art can appreciate that low resistivity, low performance, and power drain are common and well-known characteristics of defective pixels. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Gagnon with the recited pixel characteristics in order to improve resolution.

Re claim 91, Gagnon discloses means for adjusting the gain of each pixel to correct for variations (Col. 7, 55-58).

Re claim 95, Gagnon discloses a CdZnTe crystal, known for its low spectral resolution, as a single crystal (Col. 5, 1-4).

Re claims 96 and 122, Gagnon discloses a room temperature (Col. 2, 39-40) CdZnTe (Col. 2, 31) gamma detector **20** comprising a pixel array **18** wherein defective pixels are disabled

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electronically (Fig. 3; Col. 6, 39-41) and communications means **82** for communicating over a communications network (Fig. 1). Gagnon fails to specifically teach said detector pixilated into a plurality of small pixel effect type pixels. Nevertheless, Shahar teaches a semiconductor radiation detector comprising small pixel effect type pixels (Col. 16, 58-59). It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Gagnon with small pixel effect type pixels in order to increase resolution.

Re claim 97, Gagnon discloses said communications means **82** is separate from said radiation sensor **18** (Fig. 1).

Re claims 98 and 99, Gagnon discloses the claimed radiation detection system comprising communication means **82** and a radiation sensor **18**, but fails to explicitly teach how the communication means **82** is connected to the sensor **18**. However, it would have been obvious to one with ordinary skill in the art at the time the invention was made to connect the communication means **82** to the sensor **18** by either wires or via wireless link since it was known in the art that the transmission of data could be performed using wires or via wireless link.

Re claim 100, the detector array **18** is attachable to an object **30** independent of said communications means **82**.

Re claim 106, Gagnon discloses analyzing circuit **50** for analyzing detection data.

Re claim 107, Gagnon discloses display means **82** for displaying detection data.

Re claim 108, Gagnon discloses communications means **82** but fails to teach a mobile wireless communications device. Gagnon does, however, disclose that the communications device may be other human-readable display device (Col. 9, 7-9), which may include a laptop PC comprising a modem as interpreted by the Examiner. Therefore, it would have been obvious to

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one with ordinary skill in the art at the time the invention was made to modify the communications means taught by Gagnon to include a mobile wireless communications device, such as a laptop PC, for portability, mobility, and convenience.

Re claim 109, Gagnon discloses a readout **42** having a plurality of channels connected to the pixels (Col. 5, 65-67; Col. 6, 1).

Re claim 110, Gagnon discloses disabling or disconnecting individual defective pixels (Col. 6, 39-41).

Re claim 111, Gagnon discloses the claimed invention. But fails to specify the specific requirements of the defective pixels. However, those skilled in the art can appreciate that low resistivity, low performance, and power drain are common and well-known characteristics of defective pixels. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Gagnon with the recited pixel characteristics in order to improve resolution.

Re claim 115, Gagnon discloses means for disregarding data obtained from defective pixels (Col. 7, 39-41).

Re claim 116, Gagnon discloses an analyzing circuit **50** for setting a threshold level to detect defective pixels (Col. 6, 53-56).

Re claim 117, Gagnon discloses the claimed invention. But fails to specify the specific requirements of the defective pixels. However, those skilled in the art can appreciate that low resistivity, low performance, and power drain are common and well-known characteristics of defective pixels. Thus, it would have been obvious to one with ordinary skill in the art at the time

the invention was made to modify Gagnon with the recited pixel characteristics in order to improve resolution.

Re claim 119, Gagnon discloses means for adjusting the gain of each pixel to correct for variations (Col. 7, 55-58).

Re claim 123, Gagnon discloses a CdZnTe crystal, known for its low spectral resolution, as a single crystal (Col. 5, 1-4).

Claims 85, 86, 113, and 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gagnon et al. in view of Spartiotis et al. (US 2003/0155516).

Re claims 85 and 113, Gagnon discloses the claimed invention but fails to specify the combination comprising an ASIC readout mounted on an interface board wherein the readout and the detector are connected to each other by interconnects on the interface board. Spartiotis discloses an ASIC readout **130** mounted on an interface board **170** wherein the readout **130** and the detector **90** are connected to each other by interconnects **220** (Fig. 5a). It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Gagnon with the combination taught by Spartiotis for the benefit of the potential for producing larger area imaging devices with improved image quality by reducing or minimizing the amount of imaging dead area in the device [0029].

Re claims 86 and 114, Gagnon and Spartiotis teach the claimed invention according to claims 85 and 113, but fail to specify the ASIC readout chip is a VLSI readout chip. In the field of endeavor, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a VLSI readout chip since it was known in the art that VLSI is simply

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the current level of computer microchip miniaturization and refers to microchips containing in the hundreds of thousands of transistors and that nearly all modern chips employ VLSI architectures.

Allowable Subject Matter

Claims 92, 93, 101-105, 120, and 121 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With regards to claims 92, 93, 120, and 121, Gagnon discloses adjusting the gain, but fails to teach adjusting the gain as a function of the temperature measured by the temperature sensor.

With regards to claims 101-105, Gagnon discloses communications means, but fails to teach automatically transmitting the detection data without input from a user and means for communication with a central data server of a central monitoring system for transmitting detection data to the data server.

Response to Arguments

Applicant's arguments with respect to claims 80-83, 85-89, 91, 94-111, 113-117, 119, 122, and 123 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus H. Taningco whose telephone number is (571) 272-1848. The examiner can normally be reached on M - F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MT


ALBERT J. GAGLIARDI
PRIMARY EXAMINER